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Workshop on

The dynamics of EU industrial structure and the growth of innovative firms

SUMMARY

Edited by

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The present summary report has been is issued in the context of ***the Industrial Research Monitoring and Analysis (IRMA)***[1] activities that are jointly carried out by the European Commission's Joint Research Centre (JRC) – Institute for Prospective Technological Studies (IPTS) and the Directorate General Research – Directorate C, European Research Area: Knowledge-based economy.

IRMA activities aim to improve the understanding of industrial R&D and Innovation in the EU and identify medium and long-term policy implications. More information, including activities and publications, is available at: http://iri.jrc.es/ and http://ec.europa.eu/invest-in-research/

This report summarises the main results from the Workshop *Dynamics of EU industrial structure and the growth of innovative firms*, held in Brussels on 18 November 2010.

The following people contributed as **Speakers**: Christopher Allen European Commission DG ENTR, Andrea Bonaccorsi, University of Pisa (I); Xabier Goenaga, European Commission's JRC; Werner Hölzl, Austrian Institute of Economic Research (A); Leif Kjaergaard, President of LEIF and FOOD SCIENCE (DK); Pietro Moncada-Paternó-Castello, European Commission's JRC; Grant Peggie, UK Department for Business Innovation & Skills; Paolo Pietrogrande, Netplan Management Consulting LLC; Cyril Robin-Champigneul, European Commission DGRTD; Kristian Uppenberg, European Investment Bank; Bart Verspagen, UNU-MERIT; Arie van der Zwan, Senior Policy Advisor on International Affairs (Ministry of Economic Affairs - NL).

The following contributed as **Discussants**: Andries Brandsma, European Commission, JRC; Richard Cawley, European Commission, RTD; Fernando Hervás, European Commission, JRC; Isabel Grilo, European Commission's DGECFIN; Cesar Santos Gil, European Commission's ENTR.

The workshop **Moderators** were: Xabier Goenaga, European Commission, JRC; Tiit Jürimäe / Patrick McCutcheon and Jean Claude Burgelman, European Commission, DG RTD.

The editors of this summary report, Pietro Moncada-Paternò-Castello and Daria Ciriaci (from the European Commission's JRC IPTS) would like to thank colleague Abraham García, the above mentioned people, as well the other Workshop attendees for their active and fruitful contribution.

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IRMA Workshop:

Dynamics of EU industrial structure and the growth of innovative firms

European Commission - JRC-IPTS-KfG and DGRTD-C2

18 November 2010, Brussels

Summary

1. Introduction

The workshop on "Dynamics of EU industrial structure and the growth of innovative firms" has been implemented as part of the European Commission's ongoing analytical work to support policy initiatives in the context of the Europe 2020 strategy. It aimed at taking stock and presenting relevant pieces of analysis in the field of corporate R&D investment and industrial dynamics (carried out by the Commission or other entities) with an ultimate objective of identifying potential synergies between relevant studies as well as for determining the gaps and possible areas where further analysis would be necessary.

Building on recent evidence, there is growing policy consensus in Europe of the need to favour a positive dynamism of the structure of the economy (sector composition and share) which can influence the speed of achieving a knowledge-intensive society, as well as a positive dynamism of the demographics of EU smaller-sized firms to eventually become large global players, as one of the determinants for the success of the future European economy and society.

The present summary reports the relevant findings of the presentations and discussions elaborated by the participants, according to the main workshop' streams, i.e.: opening session; dynamics of the economic structures and corporate research & innovation in the EU; the relevance of the growth of innovative companies for the competitiveness of the EU; the perspective of practitioners and the role of policy. A concluding session of this report summarises the most significant messages which arose from the implementation of the event and streamlines the foreseen follow up actions.

2. Opening Session

Speakers

Xabier Goenaga Head of Unit Knowledge for Growth, European Commission's JRC-IPTS

Cyril Robin-Champigneul Deputy Head of Unit, European Research Area policy, European Commission RTD C.1

"Innovation Union Flagship Initiative"

Christopher Allen Deputy Head of Unit, Industrial Competitiveness Policy, European Commission DG ENTR B.2

"An Integrated Industrial Policy for the Globalisation Era"

The opening section introduced the workshop's aim and objectives and provided updated information on related European Union research and innovation policies and concrete initiatives.

Mr **Xabier Goenaga** explained that the workshop represented an opportunity for decision-makers, researchers and analysts to take stock of relevant knowledge and evidence available on the dynamics of the EU industrial structure and the growth of innovative firms. Furthermore, he commented that it would lend to sharing on-going and future research agendas and analysis, and allow discussion on how to best support future policy initiatives aiming at a smarter, greener and more inclusive European economy. In fact, the increasing share of fast-growing innovative companies in the economy will become a key indicator to measure the success of the new European research and innovation agenda. Evidence from leading international corporate R&D investors' analysis suggests that differences in formation and growth rates of companies in high R&D-intensity sectors may be a major cause of R&D-intensity weakness compared to competing economies. Finally, Mr Goenaga informed that the Workshop was organised in the context of Industrial Research Monitoring and Analysis (IRMA) activities that are jointly carried out by the European Commission's Joint Research Centre (JRC) – Institute for Prospective Technological Studies (IPTS) and the Directorate-General for Research – Directorate C, European Research Area: Knowledge-based economy.

Mr **Cyril Robin-Champigneul** told the audience that one of the biggest challenges for the EU and its Member States is to adopt a much more strategic approach to innovation to better attend to globalisation of knowledge production and innovation capacities. He further added that this approach must also handle the impact that the crisis has on public and private finance, and improve survival rate and growth of innovative SMEs. The 'Innovation Union', which is a is a 'flagship' in the Europe 2020 Strategy, sets out such a bold, integrated and strategic approach, exploiting and leveraging EU strengths in new and productive ways by focusing Europe's efforts, and co-operation with third countries, on challenges like climate change, energy and food security, health and the aging population. It will use public sector intervention to stimulate the private sector and remove bottlenecks which stop ideas reaching the market. Such issues are lack of finance, fragmented research systems and markets, under-using public procurement for innovation, and slow standard setting. He then presented the Innovation Union's key initiatives that aim to overcome these barriers. Progress will be monitored as part of the Europe 2020 Strategy governance. An annual Innovation Convention will discuss the Innovation Union's current situation.
(http://iri.jrc.ec.europa.eu/workshops/Session%20I%20Robin-Champigneul.pdf)

Mr **Christopher Allen** presented the Commission's recently-adopted Communication: 'An Integrated Industrial Policy for the Globalisation Era', a flagship initiative of the Europe 2020 strategy. Its objective is to boost growth and employment by maintaining and supporting a strong, diversified and competitive industrial base in Europe offering well-paid positions and becoming less carbon-intensive. Coordinated European policy responses are needed. Europe also needs an approach that considers the whole value chain, from infrastructure and raw materials to after-sales service. Promoting the creation and growth of small and medium-sized enterprises has to be at the core of EU industrial policy. Moreover, the transition to a sustainable economy has to be seized as an opportunity to strengthen competitiveness. Only a European Industrial Policy targeting competitiveness and sustainability can muster the critical mass of change and coordination needed for success. He then presented the ten key actions proposed in this initiative. Living up to the ambitions of a strong, diversified and competitive industrial base in Europe requires mutually reinforcing policies. This notably concerns the various flagship initiatives developed under the Europe 2020 strategy and strategies such as the EU's Single Market.
(http://iri.jrc.ec.europa.eu/workshops/Session%20I%20Allen.pdf)

During the discussion that followed the presentations, emphasis was put on the need to take immediate action and exhaust all possibilities offered by the current financial perspectives and supporting instruments. Particular urgency is given to improving the financial support provided to small and medium enterprises (SMEs) for innovative activities. In this respect, the recommendations issued from the recent revision of the Risk Sharing Financial Facility should be implemented quickly. The need to fully exploit the possibilities offered by the current State Aid Framework rules for R&D and innovation support was also mentioned. In any case, such urgent actions would need to be pushed jointly by Member States and the EU.

3. Dynamics of the economic structures and corporate Research & Innovation in the EU

Moderator

Tiit Jürimäe Head of Unit, Private investment and technology platforms, European Commission, DG RTD C.2, excused, – substituted by Patrick McCutcheon

Speakers

Kristian Uppenberg European Investment Bank

"European competitiveness: the role of non-scientific innovation, economic flexibility and adjustment"

Bart Verspagen UNU-MERIT

"Economic structure, innovation and firm growth"

Discussants

Fernando Hervás European Commission's JRC-IPTS

Isabel Grilo Head of Unit, Product Market Reforms, European Commission's Economic and Financial Affairs Directorate-General

This section focused on the macro influence of the economic structure, namely specialisation, on corporate research and innovation (in particular on R&D intensity) in the European Union. The speakers offered a broad picture assessing the role of R&D and other intangibles (human capital in the form of education and training) on employment creation, knowledge accumulation, and economic growth.

Mr **Kristian Uppenberg**'s presentation focused on the increasing importance of intangible assets on economic growth. He stressed that this kind of investment currently accounts for between one third and half of the market value of the US corporate sector, while in Europe – although having almost tripled since the early 1990s – is still only around thirty per cent. Furthermore, while in the US intangible investment is of a similar order of magnitude as tangible, it tends to remain far below tangible investment in Europe. Following Corrado, Hulten and Sichel (2005), he specified that these assets may be divided into three main types: 1) computerised information (namely, software and databases); 2) scientific and creative property (R&D, mineral exploitation, copyright and license costs, design, and other research costs); 3) economic competencies (brand equity; firm-specific human capital and organisational structure). In the US, economic competencies account for as much as half of total intangible assets, whereas innovative property such as copyrights and licences tend to dominate in continental Europe. He also outlined how the interaction between tangible and intangible investment, innovation and market dynamics (as number of firms which enter and exit the market) positively contribute to productivity growth if helped by appropriate framework conditions (for instance, product market regulation) and policies. The final part of his presentation was dedicated to how the firm's age affects adopting innovation, job creation and productivity growth. He showed some empirical evidence demonstrating that firm age, and not firm size, is the most important constraint for firm's growth: job creation rates of young firms are substantially higher than for older firms. That is why he argued that framework conditions need to be favourable for new firms.
(http://iri.jrc.ec.europa.eu/workshops/Session%20II%20Uppenberg.pdf).

This latter point has been criticised by Mr Cawley who stressed the difficulty to draw policy conclusions from correlations between firms' dynamics and innovation: policies should focus on helping new firms to grow.

Prof. **Bart Verspagen** reverted to the structural nature of the R&D intensity gap between Europe and the US, discussing whether this may historically be due to less favourable business conditions. He then presented the results of an interesting decomposition exercise of some European countries' R&D intensity by sector. He showed that even if the US sectoral structure were applied to European countries there would still be a significant R&D intensity gap, at least in some countries (greater diversity of industrial structures among Member States should be emphasised). These findings seem to support the idea that there is no sectoral bias in Europe at the level of sectoral aggregation that he considered.
(http://iri.jrc.ec.europa.eu/workshops/Session%20II%20Uppenberg.pdf).

This last point has been criticised by Ms Grilo and by the session moderator, Mr McCutcheon. On the one hand, Ms Grilo pointed out that according to a European Commission study, the US-EU gap (which is around 20-40%) is due to sectoral structure. On the other hand, Mr McCutcheon stressed the importance of focusing on the real growth consequences considered by Verspagen.

Overall, participants agreed that given the structural nature of the gap, focus on intangibles, business, and institutional conditions (including labour market policies) is needed from a policy point of view. Innovation needs to be measured beyond R&D investments to include intangibles, education, and human capital. Issues identified for

further research include: intangible investment by sector/industry and mapping investment in new technologies and intangibles against firm dynamics (Uppenberg).

4. The relevance of the growth of innovative companies for the competitiveness of the EU

Moderator

Xabier Goenaga Head of Unit, European Commission, JRC-IPTS

Speakers

Pietro Moncada-Paternò-Castello European Commission, JRC-IPTS

"The dynamics of smaller R&D-intensive firms - Results of recent IRMA analyses"

Andrea Bonaccorsi University of Pisa

"European scientific performance in IT, industrial dynamics, and productivity in the service economy. In search of (unexplored) connections"

Werner Hölzl Austrian Institute of Economic Research

"Fostering fast growing firms: a silver bullet policy?"

Discussants

Richard Cawley European Commission - DG RTD.C

Andries Brandsma European Commission, JRC-IPTS

Cesar Santos Gil European Commission - DG ENTR

This section focused on the possible link between SME's dynamics and the differences between structure evolution and business R&D performance between the EU and the competing economies, mainly the US. The speakers offered both a comprehensive picture, and different points of view. Mr Moncada-Paternò-Castello presented an overview on the structural differences in corporate R&D intensity in Europe and the US (sector mix, size, and lack of firms among young leading innovators). Prof. Bonaccorsi focused on the IT services sector, describing the historical reasons that, to his judgment, partly explain why IT firms' performances differ in the US and EU. Finally, Dr Hölzl introduced the results of a micro-data-based analysis, which indicates the lack and temporary status of fast-growing firms in EU market.

The empirical evidence found by recent analyses conducted at IPTS in the framework of IRMA project and presented by Mr **Moncada-Paternò-Castello** shows the following results: 1) The sectoral composition of the EU economy is not very dynamic (it has not changed very much during recent decades). In turn, this is what mainly determines the EU's R&D intensity deficit. 2) In the US there is a larger population of smaller R&D-intensity firms which invest more strongly in R&D, especially in high R&D-intensity sectors. Moreover, the EU shows a significant lack of firms among young leading innovators (those with higher R&D investment, founded after 1975). This type of company, which presents greater sale growth performance compared to the old leading innovators, are less R&D-intensive in the EU than in the US and this appears to be one of the main factors explaining the EU/US R&D intensity gap. 3) Critical factors for growth of smaller innovative firms are: upgrading skills, organisational innovation, access to

human and financial capital and to external knowledge, all of which depend on 'framework conditions'. Mr Moncada-Paternò-Castello concluded that the dynamics of smaller and younger firms which eventually become large global players investing in R&D has a relevant role in how the EU economic structure and the technology and knowledge, hence the competitiveness and growth, are to evolve. He indicated that this type of firms follow a different pattern depending on the sector they operate, meaning that policy measures aiming at supporting their growth need to be equally diverse.
(http://iri.jrc.ec.europa.eu/workshops/Session%20III%20Moncada-Paterno-Castello.pdf)

Prof. **Andrea Bonaccorsi** analysed the European IT industry's poor performance (comparing it with the US) in terms of innovation, exports, and competitiveness, stressing how the lack of complementarities between IT adoption and organisational change in the EU might be an explanatory factor. He highlighted how differences in military expenditure, market size, corporate models, and institutions (in particular, the relationship between universities and business), and linguistic fragmentation might also play a role. Universities emerged as a fundamental institution, as they are involved in the first large-scale software development programs, and they manage high-level academic research which helps idea incubation. The fundamental difference between the US and EU is in the strong ties between universities, idea incubation, and business development, as part of the knowledge generation process, which has an impact on productivity and competitiveness through induced organisational change. Two main implications emerge from his analysis. First, young innovative companies have been a feature of the US landscape in IT since it began and have been entering in subsequent waves in the 1960s, 1970s, and massively after the 1980s. Their growth has been fostered by pro-competitive public policies (e.g. supercomputing). However, continental European countries have adopted 'national champion' industrial policies for a long time, inhibiting the growth of young firms. Second, the well known gap in productivity between US and EU in the service sector can be traced back to the fact that all main US service industries have adopted radically new IT solutions early, exploiting learning curve effects which showed their impact on productivity after the 1990s. As such, the current gap in young leading IT innovators has long-term roots.
(http://iri.jrc.ec.europa.eu/workshops/Session%20III%20Bonaccorsi.pdf)

Dr **Werner Hölzl** presented some interesting empirical evidence (mainly related to Austria and the UK) on the characteristics of 'fast growing firms' (firms with an annual growth of >20% over a period of 3 years; OECD–Eurostat, 2007) and their role in creating employment. Europe has less new high technology firms, lower firm dynamics (post-entry growth), and more micro-enterprises than the US. The paper's main conclusions are that fast growing firms are rare in Europe (tending to be of temporary status) but their contribution to job creation is important, they are small (but not over-proportionally), are not necessarily young (but over-proportionally young firms), and express market dynamism (in fact, the industry share of high growth firms is correlated with the industry share of fast declining firms). As far as the sectoral composition is concerned, a larger share of those firms emerged in real estate, business services and transport, storage and communications, and surprisingly in electricity, gas, and water supply. Finally, the data show significant country differences among the most advanced EU member states. These differences might be due to differences in market size, industry growth, ease of being a high growth firm, the business environment, and regulation.
(http://iri.jrc.ec.europa.eu/workshops/Session%20III%20Holzl.pdf)

In general, the session outlined the need to put more emphasis on dynamics and structural change, on firm capabilities and business conditions (some also argued that the main source of difference between US and EU is cultural: entrepreneurship, risk aversion, social model). It also stressed how policies aiming at picking up the winners

are difficult to apply due to the uncertainties of ex ante choices. Supporting innovation is necessary, but one size does not fit all. There is agreement that the main problem in Europe is not company creation but the companies' ability to grow beyond certain thresholds.

Three main points emerged from the subsequent discussion. Firstly, the empirical evidence presented must be carefully discussed as it refers to big firms, and that the different behaviour in terms of R&D expenditures observed in EU and US might be due to different concentration levels in those markets and not to sectoral differences (as other works seem to suggest; see EIB, 2009; Cawley). Secondly, results must be interpreted in light of what economic theory suggests, considering that corporate R&D expenditure is an intermediate output to the extent that is a good proxy for a firm's future productivity growth (Cawley). Thirdly, the purpose for policies is to create the framework condition for firms' growth and to foster venture capital, not to fund fast growing firms or gazelles (Santos), given the ex ante uncertainties discussed above (Peggie). In view of the new, but yet to be defined, innovation indicator announced by the Commission, i.e. 'share of fast-growing innovative firms', a number of questions that might need further research were formulated (Hölzl, Santos):

- What is innovative? (fast growing firms are not necessarily in high R&D-intensive sectors),
- What is the role of disruptive technologies?
- How to tackle the trade-off between stability (role of mature sectors, large companies) and dynamism?

5. Round Table: The perspective of practitioners, the role of policy

Moderator

Jean-Claude Burgelman European Commission - Directorate-General for Research, RTD.L.ADV02

Speakers

Leif Kjaergaard President of LEIF and FOOD SCIENCE (DK)

"From research over innovation to industry policy - Are these coherent?"

Grant Peggie UK Department for Business Innovation & Skills

"Innovation policy"

Paolo Pietrogrande Member of the Board of Directors of Ryanair and of AMKA Onlus; Advisor of Wheb Capital Ventures and of 9REN; President of Netplan Management Consulting LLC

"Europe: the leading clean tech investor - A case study"

Arie van der Zwan Ministry of Economic Affairs (NL)

"Some reflections on dynamics of Dutch industrial structure vs. EU-15 and OECD and some policy options"

In the first part of his intervention, Dr **Leif Kjaergaard** highlighted that very few EU companies are between the top-50 most innovative companies and that the average sales growth for the top-50 most innovative companies during 2007-2009 was 10-12% (while the average for the top 2000 R&D companies for the same period was approximately 3%). From this, it seems obvious that there is a need for strong innovation in the EU. He then shared his doubts that the issues of industrial structures and companies' dynamics should be addressed by concrete policy measures. Nonetheless, he recognised that instruments such as the coming EU eighth Framework Programme (2014-20) can have an influence on the industrial structure if structured correctly regarding the 'Grand Challenges'. It was also underpinned that different policy departments should be involved (research and innovation, industrial policy, specific sectoral departments) but not at the cost of scientific excellence. There should always be room for good frontier research. Areas such as the EU Patent, GMO-regulation (and in general science-based regulation), Free Trade of goods and resources, growth oriented regulation of the internal market, unified market for venture capital, are equally important. Dr Kjaergaard also suggested that it is not easy to ensure that industry representatives and other relevant stakeholders are involved in the policy making process. Nonetheless, policy should secure the important interaction between production (enterprises) and research, taking into account that objectives and approaches vary from one industry segment to another. He concluded his speech by suggesting that policy-makers need to better understand the industrial knowledge intensive production in a globalised world and this should become a priority in the future innovation and research portfolio.
(http://iri.jrc.ec.europa.eu/workshops/Session%20IV%20Kjaergaard.pdf)

Dr **Grant Peggie** underlined the relevance of innovation and in particular its contribution to boost business growth and exports. He introduced the most recent information on corporate R&D investment indicating that global R&D spending fell by 2%, and that companies in China and India contributed 1.8% to the total R&D investment. However, companies based in these countries significantly increased their R&D (China by 40% and India 18%) compared to the previous year. Furthermore, he indicated that in 2009 pharmaceuticals and biotechnology were still the largest global R&D sectors, while the largest global decline in R&D investment was in automobile and technology hardware sectors (the UK experienced, instead, an increase in these two sectors). Dr Peggie stressed that government should only intervene when there are clear market failures, and in doing so it needs to address the major societal challenges (carbon emissions, aging society, citizen safety and security, etc.). There are measures in UK aiming to address these failures together with the societal challenges, for example establishing a network of Technology and Innovation Centres to drive growth in high-tech industries, and introducing R&D tax credits, although he argued that they should be accompanied by grant programmes as they serve slightly different markets. Dr Peggie ended his presentation by pointing out the UK priorities linked to the EU 2020 strategy: a) Financing of Innovative SMEs through pan-European funds, b) Using public sector procurement to drive demand through an EU Small Business Innovation Research (SBIR) programme and c) European Innovation Partnerships with an early pilot on active and healthy aging. During the discussion he suggested to consider setting up an EU R&D tax credits report.
(http://iri.jrc.ec.europa.eu/workshops/Session%20IV%20Peggie.pdf)

Mr **Paolo Pietrogrande** made the general point that companies are driven by market share and product performance to get premium pricing. Relevant success elements are time-to-market and early product credibility. Often how to represent capital expenditures and engineering salaries into the annual report is more influenced by PR/reporting needs than effectively representing the companies' actual level of innovation: as such,

resorting to slow-moving public funding may introduce excessive constraints to actual innovation. However, large companies depend on public funding for nationwide strategic programmes, and smaller companies take the opportunity to use public funding to support R&D salaries while still entertaining product innovation on their own balance sheet, and profit and loss accounts. He introduced the case of the photovoltaic (PV) energy industry. One of the main lessons was that EU Member States have heavily incentivised power plant construction, but have not given European component manufacturers enough preemption time to develop advanced products and efficient manufacturing processes. As such, most of the incentivised plants have actually benefited non-EU manufacturers. Mr Pietrogrande commented that €55 billion has been spent on building solar power plants in Europe over the last 6 years, although 78% of global expenditures have resulted in only 35% market share for EU components and products. Of the €30 billion invested in the EU in 2009 on photovoltaic power systems, an estimated 43% resulted in actual energy or local employment benefit, while 57% funded photovoltaic manufacturers, two third of which were foreign. Finally, he pointed out that at this stage of market development, European innovation in this sector should no longer focus on core components, but rather on key competitive advantages generated by those installed: operations and maintenances (O&M) technology, performance upgrading, recycling, design, architecture, urban planning. The excessive incentives deployed by governments, with no sustainable long-term strategy has forced industry to focus on short-term opportunities: now, large and small EU PV players' lack of vision of post-domestic boom to support them in the growing global market.
(http://iri.jrc.ec.europa.eu/workshops/Session%20IV%20Pietrogrande.pdf)

Dr **Arie Van der Zwan** concluded the round table interventions. He opened his presentation by underlining that the industrial structure is a constant element of concern in Dutch research and innovation policy. As both structural and intrinsic effects are almost equally responsible (-0.21 and -0.31, respectively) for the Dutch R&D intensity deficit, policy makers are considering different policy options which may address the two different causes (an interesting list is provided on slide No 8 of Dr Van der Zwan's presentation). He then highlighted that governance' actions which address innovation-lead growth should clearly define the roles of the various public departments, the link with societal challenges and its ownership. Nonetheless, he suggested that industry does not only have a national or EU scope, but increasingly has a more global dimension. Accordingly, industrial R&D very often follows a global footprint. Dr Van der Zwan finally advocated the need for a 'Strategic Intelligence' for policy-making based on a set of new innovation data (e.g. new indicators developed by OECD/NESTI) or the age of leading innovators as recently researched by Cincera and Veugelers (important for new indicator on Innovation for EU 2020), new/relevant information about global knowledge chains, and more information on service sector and forms of soft innovation.
(http://iri.jrc.ec.europa.eu/workshops/Session%20IV%20van%20der%20Zwan.pdf)

During the discussion, the importance of the right framework conditions (including good EU single market functioning and entrepreneurial spirit) were again highlighted, questioning to what extent public intervention could or should target specific sectors or technologies when designing R&D and innovation support instruments. The need to look further at how to implement the proposal of establishing a SBIR type support programme at EU level, focusing on the use of public procurement as leverage of innovation for SMEs, has been mentioned. In this respect, addressing societal challenges might help mobilise public procurement budgets at EU level. Another aspect mentioned was the need to adequately design public incentives in order to promote European companies' medium- and long-term strategies (rather than just short-term visions as has happened in the photovoltaic sector as explained above).

6. Conclusions

Speaker

Xabier Goenaga Head of Unit Knowledge for Growth, European Commission - JRC-IPTS

From the evidence presented in the Workshop and the subsequent discussions, one could conclude that one of the main final objectives for public intervention in Europe in research, innovation and industrial policies should be to increase growth of European innovative companies. In this respect formulating a new indicator related to the share of fast-growing innovative companies, as announced by the Commission in the Innovation Union initiative, is going in the right direction.

There is however need for further analysis and research to support the definition of concrete measures and instruments that would lead to this final objective. Future evidence gathering and research should focus on the following main issues:

- How to define an innovative company. Consensus emerged during the Workshop that the level of R&D investments is an incomplete proxy for most economy sectors. Any attempt to measure and understand companies' and sectors' degree of innovation should consider investments on the broad range of intangible assets related to strengthening and using companies' knowledge capital, including their workers' education and skill levels. Companies' ability to absorb new technologies (including ICTs) is an important factor to analyse, particularly for low R&D intensive sectors and for smaller companies.
- A more detailed analysis of the relationship between firms dynamics (growth mainly) and levels of innovation investments (beyond R&D), differentiating between sector and technology (what role do specific technologies play?, i.e. key enabling technologies, disruptive technologies, ICTs, etc.).
- The scope/convenience of targeting support instruments to specific companies and/or sectors: use age rather than size as an eligibility factor (as age seems to matter more than size as a factor explaining innovation and growth), target some specific sectors (high-tech sectors where Europe lags behind, knowledge-intensive service sector, others?)
- The feasibility and success factors for using public procurement as an innovation lever for companies at European level, in particular for creating demand for innovative SMEs and push their first growth stages. (What could Europe have learned from the SBIR experience in the US and from Member States experiences, particularly in the UK and the Netherlands?) Would focussing on societal challenges help launch an instrument at EU level benefiting from MS-specific contributions?

During a final 'tour de table' participants identified the following key points to be considered for future public intervention in this area:

- Need for adequate signals to industry for investments in key areas related to societal challenges.
- Attention should be paid not only to high-tech sectors, but also to the evolution of lower, well-established sectors in the EU.
- Good regulatory intervention could provide such signals and promote innovation. Need to foster specialisation.

- Weakness in Europe lies in the service sector; therefore there is a need to push for single market in this area.
- Key bottleneck in Europe is the lack of a well functioning-unified market, which in turn has a fundamental role for competition policy.
- Need for industries/companies to have a strategic view, being sure of where they are and knowing where they want to be.
- Support to innovative SMEs with targeted instruments such as SBIR could make a difference.
- Need to promote EU/Member States cooperation and innovation partnership among companies.
- Framework conditions, creating demand is crucial to promote innovative company growth.
- Removing obstacles for entrepreneurial activity is vital.
- Need to keep support instruments simple, need to promote ownership in companies, need for leadership and for flexibility and responsiveness of instruments as the world is changing very quickly.
- Labour and capital markets (e.g. availability of skilled workforce and to risk-venture capital) are vital for the growth of innovative firms. Therefore, the EU needs to mobilise support now to foster the growth of companies (2014 too late!)
- Role of large companies in Europe is still very important.
- R&D and Innovation are part of a broader business strategy; accordingly, R&D and innovation should be more in the sphere of competitiveness policy.

Follow-up

The Workshop confirmed the relevance of the topic discussed, forming a link between the dynamics of the EU industrial structures and the growth of innovative firms, in the context of the up-coming development and RDI implementation (Innovation Union) and Industrial EU Policy agendas. In this respect, this topic will be the main focus of the next European Conference on Corporate R&D and Innovation (CONCORD-2011). The results from this Workshop will help shape the call for CONCORD-2011 (http://iri.jrc.ec.europa.eu/concord-2011/)' Academic Forum papers and identify the main policy questions to be addressed during the discussions between the researcher community, industrial representatives and policy makers.
Besides, this topic will remain at the top of the agenda with regards the research and analysis activities carried-out by the European Commission's Joint Research Centre (JRC) – Institute for Prospective Technological Studies (IPTS) in cooperation with the Directorate General for Research - Directorate C, European Research Area: Knowledge-based economy. It will also include the elaboration by the European Commission's JRC-IPTS of a *Policy Brief* document in 2011 and a number of *Working Papers* on related issues (e.g. analysis of the growth of SMEs, role of intangible assets).

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Abstract
The workshop on "Dynamics of EU industrial structure and the growth of innovative firms" has been implemented as part of the European Commission's ongoing analytical work to support policy initiatives in the context of the Europe 2020 strategy. It aimed at taking stock and presenting relevant pieces of analysis in the field of corporate R&D investment and industrial dynamics (carried out by the Commission or other entities) with an ultimate objective of identifying potential synergies between relevant studies as well as for determining the gaps and possible areas where further analysis would be necessary.

The present summary reports the relevant findings of the presentations and discussions elaborated by the participants, according to the main workshop' streams, i.e.: opening session; dynamics of the economic structures and corporate research & innovation in the EU; the relevance of the growth of innovative companies for the competitiveness of the EU; the perspective of practitioners and the role of policy. A concluding session of this report summarises the most significant messages which arose from the implementation of the event and streamlines the foreseen follow up actions.

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